

WHAT IS CLAIMED IS:

1. An isolated nucleic acid molecule encoding a *Chlamydia* high molecular weight (HMW) protein, said HMW protein comprising an amino acid sequence of SEQ ID NO.: 15.
- 5 2. An isolated nucleic acid molecule encoding a *Chlamydia* high molecular weight (HMW) protein, said HMW protein comprising an amino acid sequence of SEQ ID NO.: 16.
3. The nucleic acid molecule of Claim 1 comprising a DNA sequence of SEQ ID NO.: 23 or the complement of said molecule.
- 10 4. The nucleic acid molecule of Claim 1 comprising a DNA sequence of SEQ ID NO.: 24 or the complement of said molecule.
5. An isolated nucleic acid molecule comprising, a nucleic acid sequence which hybridizes under conditions comprising 50% formamide and 37°C to a DNA sequence which is complementary to SEQ ID No.: 23 and encodes a protein which is recognized by an
15 antibody that specifically binds to a protein comprising an amino acid sequence of SEQ ID NO.: 15.
6. An isolated nucleic acid molecule comprising, a nucleic acid sequence which hybridizes under conditions comprising 50% formamide and 37°C to a DNA sequence which is complementary to SEQ ID No.: 24 and encodes a protein which is recognized by an
20 antibody that specifically binds to a protein comprising an amino acid sequence of SEQ ID NO.: 16.
7. The nucleic acid molecule of claim 1, wherein the *Chlamydia* species is *Chlamydia trachomatis*, *Chlamydia pecorum*, *Chlamydia psittaci* or *Chlamydia pneumoniae*.
8. The nucleic acid molecule of claim 2, wherein the *Chlamydia* species is
25 *Chlamydia trachomatis*, *Chlamydia pecorum*, *Chlamydia psittaci* or *Chlamydia pneumoniae*.
9. A recombinant expression vector adapted for transformation of a host comprising the nucleic acid molecule of Claim 1 or 5.
10. A recombinant expression vector adapted for transformation of a host comprising the nucleic acid molecule of Claim 2 or 6.

11. A recombinant expression vector adapted for transformation of a host comprising the nucleic acid molecule of claim 1 or 5 and expression means operatively coupled to the nucleic acid molecule for expression.

12. A recombinant expression vector adapted for transformation of a host
5 comprising the nucleic acid molecule of claim 2 or 6 and expression means operatively coupled to the nucleic acid molecule for expression.

13. The expression vector of claim 11, wherein the expression means includes a nucleic acid portion encoding a leader sequence for secretion.

14. The expression vector of claim 12, wherein the expression means includes a
10 nucleic acid portion encoding a leader sequence for secretion.

15. A transformed host cell containing an expression vector of Claim 11.

16. A transformed host cell containing an expression vector of Claim 12.

17. A transformed host cell containing an expression vector of Claim 13.

18. A transformed host cell containing an expression vector of Claim 14.

15 19. An isolated nucleic acid molecule comprising at least 50 nucleotides of SEQ ID NO.: 23 and encoding a fragment of a *Chlamydia* high molecular weight (HMW) protein, wherein said fragment is recognized by an antibody that specifically binds to a protein comprising an amino acid sequence of SEQ ID NO.: 15.

20 20. An isolated nucleic acid molecule comprising at least 50 nucleotides of SEQ ID NO.: 24 and encoding a fragment of a *Chlamydia* high molecular weight (HMW) protein, wherein said fragment is recognized by an antibody that specifically binds to a protein comprising an amino acid sequence of SEQ ID NO.: 16.

21. Isolated antisera specific for a composition comprising a nucleic acid comprising the DNA sequence of SEQ ID. NO.: 1, 23 or 24.

25 22. An isolated antibody that specifically binds a *Chlamydia* HMW protein comprising an amino acid sequence of SEQ ID. NO.: 2, 15 or 16 or an amino acid sequence encoded by a nucleic acid of SEQ ID NO.: 1, 23 or 24 or a fragment or analogue of said protein.

30 23. A method for detecting anti-*Chlamydia* antibodies in a test sample comprising the steps of:

- a) contacting said sample with a *Chlamydia* HMW protein comprising an amino acid sequence of SEQ ID. NO.: 2, 15 or 16 or an amino acid sequence encoded by a nucleic acid of SEQ ID NO.: 1, 23 or 24 or a fragment or analogue of said protein to form *Chlamydia* antigen: anti- *Chlamydia* antibody immunocomplexes if said antibodies are present, and further,
- b) either detecting the presence of or measuring the amount of said immunocomplexes formed during step a) as an indication of the presence of said anti-*Chlamydia* antibodies in the test sample.

24. A method for detecting the presence of *Chlamydia* in a test sample comprising the steps of:

- a) contacting said test sample with the antibody of claim 22 for a time sufficient to allow said antibodies to bind *Chlamydia*, if present, and to form a *Chlamydia*: anti-*Chlamydia* antibody immunocomplexes, and further,
- b) either detecting the presence of or measuring the amount of said immunocomplexes formed during step a) as an indication of the presence of said *Chlamydia* in the test sample.

25. A diagnostic kit for detecting the presence of *Chlamydia*, said kit comprising the antibody of claim 22, container means for contacting said antibody with a test sample suspected of having said *Chlamydia* and reagent means for detecting or measuring *Chlamydia*: anti-*Chlamydia* antibody immunocomplexes formed between said antibodies and said *Chlamydia*.